

**Bill-of-Quantities for 7800 cum Capacity Reservoir at Geeta Nagar I (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount	
				Local		Foreign		Local	Foreign
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.		
3.09	Providing, fixing, Testing and commissioning of IP65 protected decorative lighting luminaire Post top suitable for following lamps, made of powder coated cast aluminium housing, moulded acrylic lamp compartment with built in anodized aluminium louvers for lamp shielding and glare control, metallic lid top cover, including the cost of control gear complete in all respect. Bollards are including cost of decorative base pipe/ plate.								
a	70 Watt HPSV	Nos.	2						
3.10	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor armoured of IS:7098-I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, 11nd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size								
a	4/CX 25 mm <sup>2</sup>	m	250						
b	4/CX 16 mm <sup>2</sup>	m	750						

**Cost Estimate for 1100 cum Capacity Reservoir at Geeta Nagar II (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local	Foreign	Local	Foreign
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.
3.10	Providing, fixing, Testing and commissioning of IP65 protected decorative lighting luminaire Post top suitable for following lamps, made of powder coated cast aluminium housing, moulded acrylic lamp compartment with built in anodized aluminium louvers for lamp shielding and glare control, metallic lid top cover, including the cost of control gear complete in all respect. Bollards are including cost of decorative base pipe/ plate.						
a	70 Watt HPSV	Nos.	2				
3.11	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor armoured of IS:7098-I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, 11nd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size						
a	4/CX 25 mm <sup>2</sup>	m	150				
b	4/CX 16 mm <sup>2</sup>	m	500				

**Cost Estimate for 1100 cum Capacity Reservoir at Geeta Nagar II (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount	
				Local		Foreign		Local	Foreign
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.
3.12	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of size.								
a	4/CX 25 mm <sup>2</sup>	Nos.	4						
b	4/CX 16 mm <sup>2</sup>	Nos.	14						
c	Feeder Pillar	Nos.	1						
3.13	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with spport.	Nos.	1						
			<b>SUB TOTAL</b>						
			<b>GRAND TOTAL</b>						

**Bill-of-Quantities for 7800 cum Capacity Reservoir at Geeta Nagar I (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate			Amount		
				Local		Foreign	Local		Foreign
				Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
1.16	Providing and erecting 3.0 m. high chain link fencing with chain link having hole size 65 mm x 65 mm supported on M.S.angle post of size 50 mm x 50 mm x 6 mm at 2.40 m c/c including excavating pits for foundation fixing post in M 20 concrete of size 45 cm x 45 cm x 45 cm fixing chain link with 3.25 mm ( 10 gauge ) G.I. wire at top and bottom and with oil paint etc. complete and Providing and fixing steel frame 4.0 m wide Double leaf Entrance gate (exterior) complete in all respect including welding, painting, finishing etc. complete and as per drawings and specification..	m	220						
1.17	<b>Water proofing on Roof</b> Providing and laying three layers of cold bituminous paint with two layers of polyester felt and gravel to roof and parapet walls for water proofing.	m <sup>2</sup>	900						
1.18	<b>Painting</b>								
a	Providing and applying primer coat for wall surface to receive oil bound distemper treatment.	m <sup>2</sup>	3,000						
b	Providing and applying washable oil bound distemper of approved colour and shade to new surfaces in two coats including scaffolding, preparing the surfaces (excluding the primer coat) complete.	m <sup>2</sup>	3,000						
c	Providing and applying priming coat on concrete/masonry/Asbestos Cement /plastered surfaces including scaffolding if necessary, preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter and sand papering as required. (Sample and brand is to be got approved from Engineer incharge before use)	m <sup>2</sup>	3,000						

**Bill-of-Quantities for 7800 cum Capacity Reservoir at Geeta Nagar I (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate			Amount		
				Local		Foreign	Local		Foreign
				Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
b	Providing and fixing in position Stainless Steel ladder inside the reservoir including cost of material and labour involved, welding, cages, anchoring and applying 3 coat of anti-corrosive paint, etc. complete and as per drawings and specification.	Nos.	1						
c	Providing and fixing in position Access aluminium ladder out side the reservoir including cost of material and labour involved, complete and as per drawings and specification.	Nos.	1						
d	Providing and fixing steel frame for internal door including complete in all respect complete and size as per drawings and specification.	m <sup>2</sup>	13						
e	Providing and fixing in position steel windows with openable frame, of approved quality, fixture and fastenings, handle, stopper etc. complete as per drawings and specification.	m <sup>2</sup>	15						
f	Providing and fixing steel frame 14 inch Roof ventilator including complete in all respect including welding, painting, finishing etc. complete and as per specification.	No.	2						
g	Providing and fixing Fiber glass reinforced plastic doors for external door in Chlorine room including complete in all respect complete and size as per drawings and specification.	m <sup>2</sup>	7						

**Bill-of-Quantities for 10250 cum Capacity Reservoir at Amiya Nagar (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount						
				Local		Foreign		Local		Foreign				
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.			
a	70 Watt HPSV	Nos.	2											
3.10	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV/ grade with aluminium conductor armoured of IS:7098-I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, 11nd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size													
a	4/CX 25 mm <sup>2</sup>	m	200											
b	4/CX 16 mm <sup>2</sup>	m	600											
3.11	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of size.													
a	4/CX 25 mm <sup>2</sup>	Nos.	4											
b	4/CX 16 mm <sup>2</sup>	Nos.	18											
3.12	Feeder Pillar	Nos.	1											
3.13	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with support.	Nos.	1											
3.14	Supply and install ceiling fan (1200mm sweep) complete with double ball bearing capacitor starter with regulator and other accessories for complete operation.	Nos.	2											
			<b>SUB TOTAL</b>											
			<b>GRAND TOTAL</b>											

**Bill-of-Quantities for 4500cum Capacity Reservoir at Lichubagan (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount			
				Local		Foreign		Local	Foreign	Applicable taxes and duties etc.	
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.				
3.09	Providing, fixing, Testing and commissioning of IP65 protected decorative lighting luminaire Post top suitable for following lamps, made of powder coated cast aluminium housing, moulded acrylic lamp compartment with built in anodized aluminium louvers for lamp shielding and glare control, metallic lid top cover, including the cost of control gear complete in all respect. Bollards are including cost of decorative base pipe/ plate.	Nos.	2								
a	70 Watt HPSV										
3.10	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor armoured of IS:7098-I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, IInd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size	m	150								
a	4/CX 25 mm <sup>2</sup>										
b	4/CX 16 mm <sup>2</sup>		500								
3.11	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of size.	Nos.	4								
a	4/CX 25 mm <sup>2</sup>										
b	4/CX 16 mm <sup>2</sup>		14								
c	Feeder Pillar		1								
3.12	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with support.	Nos.	1								
3.13	Supply and install ceiling fan (1200mm sweep) complete with double ball bearing capacitor starter with regulator and other accessories for complete operation.	Nos.	2								
			<b>SUB TOTAL</b>								
			<b>GRAND TOTAL</b>								

**Bill-of-Quantities for 7800 cum Capacity Reservoir at Narkasur (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount					
				Local		Foreign		Local		Foreign			
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.		
b	4/CX 16 mm <sup>2</sup>	m	600										
3.12	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of size.												
a	4/CX 25 mm <sup>2</sup>	Nos.	4										
b	4/CX 16 mm <sup>2</sup>	Nos.	18										
3.13	Feeder Pillar	Nos.	1										
3.14	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with support.	NOS.	1										
3.15	Supply and install ceiling fan (1200mm sweep) complete with double ball bearing capacitor starter with regulator and other accessories for complete operation.	NOS.	2										
	<b>GRAND TOTAL</b>												



**Bill-of-Quantities for 20500cum Capacity Reservoir at Sonaighuli (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount	
				Local		Foreign		Local	Foreign
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.		
3.09	Providing, fixing, Testing and comissioning of IP65 protected decorative lighting luminaire Post top suitable for following lamps, made of powder coated cast aluminium housing, moulded acrylic lamp compartment with built in anodized aluminium louvers for lamp shielding and glare control, metallic lid top cover, including the cost of control gear complete in all respect. Bollards are including cost of decorative base pipe/ plate.								
a	70 Watt HPSV	Nos.	2						
3.10	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor armoured of IS:7098-I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, lind class bricks covering, refilling earth,compaction of earth, making necessary connection, testing etc. as required of size								
a	4/CX 25 mm <sup>2</sup>	m	200						
b	4/CX 16 mm <sup>2</sup>	m	600						
3.11	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of size.								
a	4/CX 25 mm <sup>2</sup>	Nos.	4						
b	4/CX 16 mm <sup>2</sup>	Nos.	18						
c	Feeder Pillar	Nos.	1						
3.12	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with support.	Nos.	1						
3.13	Supply and install ceiling fan (1200mm sweep) complete with double ball bearing capacitor starter with regulator and other accessories for complete operation.	Nos.	2						
			<b>SUB TOTAL</b>						
			<b>GRAND TOTAL</b>						

**Bill-of-Quantities for 20500cum Capacity Reservoir at Sonaighuli (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount			
				Local		Foreign	Basic Rate	Applicable taxes and duties etc.	Local	Applicable taxes and duties etc.	Foreign
				Basic Rate	Applicable taxes and duties etc.						
1.12	<b>Brick work for Service building</b> Construction of Brick masonry for super structure of 300 mm thick walls in CM (1:6) prop.using First class best quality table moulded bricks including cost and conveyance of all materials, labour , scaffolding, Curing etc., complete for finished item of work and as per drawing and specification.	m <sup>3</sup>	40								
1.13	<b>Flooring</b> Providing and laying Ceramic tile flooring in upper floor of Service Building, bath room, chlorination room, and chlorination storage room using approved quality and finishing to required level, curing, etc., complete all as per specifications.	m <sup>2</sup>	150								
1.14	<b>Plastering</b> Providing and applying cement plaster 6 mm thick to ceiling in single coat in cement mortar 1:3 with out neeru finish to concrete surface in all positions including scaffolding and curing etc.	m <sup>2</sup>	50								
a	Providing and applying internal cement plaster 12 mm thick in a single coat in cement mortar 1:4 without neeru finish to concrete or brick surface in all positions including scaffolding and curing complete. Providing groove at joint of B.B.Masonry and concrete members complete.	m <sup>2</sup>	40								
b											

**Bill-of-Quantities for 20500cum Capacity Reservoir at Sonaighuli (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount	
				Local		Foreign		Basic Rate	Applicable taxes and duties etc.
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.		
a	For Reservoir	m <sup>3</sup>	7,100						
b	for Service building	m <sup>3</sup>	110						
1.09	Providing and fixing in position steel bar reinforcement (Tor Steel Fe-415 Grade) of various diameters for RCC footings, foundations, slabs, beams, columns, Retaining wall, newels, chajjas, lintels, copings, chairs and accessories, rebars in service building, Brick work etc. as per specification and drawings; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete. (including cost of binding wire).	Kg.	1,087,400						
1.10	Providing and placing in position suitable PVC water Stops conforming to IS:12200 for construction joints between two RCC members.	m	25,900						
1.11	Providing and fixing 20mm dia G.I. medium 'B' class railing with two horizontal pipes and 1.5 Mtr. Long vertical pipe 1.5 Mtr. Centre to centre with all accessories, like elbows, tees etc., including welding, threading and embedding in cement concrete M:20, block of size 30X30X40cm with 2 nos angle iron 25x25x5mm size holdfast complete as per drawings and specification	m	150						

**Cost Estimate for 300 cum Capacity Reservoir at Ramsa Hill II (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount						
				Local		Foreign		Local		Foreign				
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.			
3.09	Supply, erection, Testing and commissioning of IP65 protected decorative lighting luminaire Post top suitable for following lamps, made of powder coated cast aluminium housing, moulded acrylic lamp compartment with built in anodized aluminium louvers for lamp shielding and glare control, metallic lid top cover, including the cost of control gear complete in all respect. Bollards are including cost of decorative base pipe/ plate.													
a	70 Watt HPSV	Nos.	2											
3.10	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor armoured of IS:7098. I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, Ind class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size.													
a	4/CX 25 mm <sup>2</sup>	m	250											
b	4/CX 16 mm <sup>2</sup>	m	750											
3.11	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of													
a	4/CX 25 mm <sup>2</sup>	Nos.	4											
b	4/CX 16 mm <sup>2</sup>	Nos.	16											
c	Feeder Pillar	Nos.	1											
3.12	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with spport.	Nos	1											
			<b>SUB TOTAL</b>											
			<b>GRAND TOTAL</b>											

**Cost Estimate for 300 cum Capacity Reservoir at Ramsa Hill II (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount					
				Local		Foreign		Local		Foreign			
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.		
1.13	Providing and erecting 3.0 m. high chain link fencing with chain link having hole size 65 mm x 65 mm supported on M.S.angle post of size 50 mm x 50 mm x 6 mm at 2.40 m c/c including excavating pits for foundation fixing post in M 20 concrete of size 45 cm x 45 cm x 45 cm fixing chain link with 3.25 mm ( 10 gauge ) G.I. wire at top and bottom and with oil paint etc. complete and Providing and fixing steel frame 4.0 m wide Double leaf Entrance gate (exterior) complete in all respect including welding, painting, finishing etc. complete and as per drawings and specification..	m	130										
1.14	<b>Water proofing on Roof</b> Providing and laying three layers of cold bituminous paint with two layers of polyester felt and gravel to roof and parapet walls for water proofing.	m <sup>2</sup>	100										
1.15	<b>Painting</b>												
a	Providing and applying primer coat for wall surface as per specification	m <sup>2</sup>	200										
b	Providing and applying washable oil bound distemper of approved colour and shade to new surfaces in two coats including scaffolding, preparing the surfaces complete.	m <sup>2</sup>	200										
c	Providing and applying priming coat on concrete/masonry/plastered surfaces including scaffolding if necessary, preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter and sand papering as required as per specification.	m <sup>2</sup>	200										
d	Painting on new surface with duco paint (1C or equivalent ) to give an even shade (minimum 4 coats with preparation of surface by rubbing, primer coats, duco filler putty including polishing etc complete :	m <sup>2</sup>	50										
	on steel work												

Cost Estimate for 300 cum Capacity Reservoir at Ramsa Hill II (Revised November 4, 2010)

Item No.	Description	Unit	Quantity	Rate				Amount	
				Local		Foreign		Local	Foreign
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.		
ii	In walls, columns, roof slab, beams, lintels, chhajjas, ventilators and stair etc.								
a	For Reservoir	m <sup>3</sup>	200						
1.09	Providing and fixing in position steel bar reinforcement (Tor Steel Fe-415 Grade) of various diameters for RCC footings, foundations, slabs, beams, columns, Retaining wall, newels, chhajjas, lintels, copings, chairs and accessories, rebars in service building, Brick work etc. as per specification and drawings; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete. (including cost of binding wire).	Kg.	35,120						
1.10	Providing and placing in position suitable PVC water Stops conforming to IS:12200 for construction joints between two RCC members.	m	300						
1.11	<b>DOOR &amp; WINDOW AND ROLLING SHUTTER</b>								
1.12	Providing and fixing steel frame 14 inch Roof ventilator including complete in all respect including welding, painting, finishing etc. complete and as per specification.	No.	2						

**Bill-of-Quantities for 23800 cum Capacity Reservoir at Ramsahill (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate				Amount		
				Local		Foreign	Local		Foreign	
				Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
3.12	Feeder Pillar	Nos.	1							
3.13	Supply Install test and commissioning 11kv /433v 3 phase main transformer (with neutral in secondary side) complete with support.	Nos.	1							
3.14	Supply and install ceiling fan (1200mm sweep) complete with double ball bearing capacitor starter with regulator and other accessories for complete operation.	Nos.	2							
		<b>SUB TOTAL</b>								
		<b>GRAND TOTAL</b>								





**Pumping Station at NARKASUR (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate			Amount		
				Local Basic Rate	Applicable taxes and	Foreign	Local Basic Rate	Applicable taxes and	Foreign
	<b>Pump Inlet Piping</b>								
2.03	Supplying, installing, commissioning & third party inspection of 500 mm dia. MS pipe from the 700mm MS pipe from Ramsa Hill reservoir to the pump inlet including connection to the 700mm pipe. Cost includes all fittings, all valves, pressure gauges, flanges, bends, tees, couplings, reducers enlargers, nuts, bolts and gaskets, sleeve coupling, etc jointing with the inlet pipe as per specification and drawings..	Each	3						
	<b>Surge bypass section</b>								
2.04	supplying, installing, commissioning & third party inspection of 300 mm dia. MS pipe from inlet to outlet surge bypass with all fittings, All valves, pressure gauges, flanges, bends, tees, reducers enlargers, nuts, bolts and gaskets, sleeve coupling etc jointing with the inlet pipe as per specification and drawings..	LS	1						
	<b>700 MS Inlet and Outlet Pipe</b>								
2.05	Supplying, installing, commissioning & third party inspection of 700 mm ø MS pipe from the fence line to the surge bypass piping for Inlet and Outlet pipe from Ramsa Hill Reservoir/ to Narkasur reservoir including connection to 400 and 500 mm intake/discharge pipes, continuous thrust blocks, all fittings, flange, bends, tees, reducer nut, bolt etc complete in all respect and as per drawings and specification.	LS	1						
2.06	Supplying, installing, commissioning & third party inspection of <b>Monorail</b> (manually operated) of capacity 3.0 T with all accessories, cable, connection, etc complete in all respect and as per specification and drawings. Contractor is responsible for and cost shall include selecting I beam, designing connection of I beam to roof beams, preparing and submitting shop drawings to Engineer.	Nos	1						



**Package-4 Transmission Mains for the South Central Zone**

**Bill of Quantities**

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local		Foreign	
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.
i	900 mm ID 8 mm thick	m	3,115				
j	800 mm ID 6 mm thick	m	7,700				
k	700 mm ID 6 mm thick	m	8,720				
l	600 mm ID 6 mm thick for railway crossing	m	10				
m	500 mm ID 6 mm thick	m	3,345				
n	300 mm ID 5 mm thick For washout	m	30				
o	250 mm ID 5 mm thick For washout	m	30				
p	150 mm ID 5 mm thick For washout	m	30				
3.02	Providing, and Supplying of All types of MS specials such as tees, tapers, tail pieces, man hole covers, bearing plates, flanges, for MS pipe to MS pipe connection, valve connections, MS Anchor bolts, Straps, Air vent pipe of different dia and dismantling joint etc of various sizes, manufactured from Fe 410 grade MS plates having thickness not less than the pipes with standard flanges not less than 16 mm thick wherever required complete in all respect as per specification and Drawings including loading, transportation to work site, unloading and stacking, etc complete with cost of third party inspection, all the material and labour, taxes and duties for all leads and lifts involved. Negative tolerance will not be allowed in respect of the thickness of MS specials. Unit Rate shall include lining and coating.						
		MT	171				

**Package-4 Transmission Mains for the South Central Zone**

**Bill of Quantities**

Item No.	Description	Unit	Quantity	Rate		Amount	
				Local		Foreign	
				Basic Rate	Applicable taxes and duties etc.	Basic Rate	Applicable taxes and duties etc.
2.05	Structural steel work in single section fixed with connecting plate including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete above plinth level upto 4.5 meter height in R.S. joist flats, tees, angles and channels.	MT	5				
			<b>SUB TOTAL</b>				
<b>3.0</b>	<b>Pipelines, Specials and Appurtenances</b>						
3.01	Providing, Supplying and fabricating spirally welded MS pipes of following internal diameters and thicknesses as per Specifications and as per IS 2062, IS 3589 and IS 5504. The rate shall include all local and central taxes , Third party inspection, transportation, freight charges, loading and unloading, conveyance to site and stacking the same, cost of all labour, material and giving satisfactory testing as per technical specifications. complete in all respects as per Specifications and Drawings. Unit Rate shall include lining and coating.						
a	1700 mm ID 12 mm thick	m	380				
b	1650 mm ID 20 mm thick	m	30				
c	1500 mm ID 16 mm thick for Pumping mains	m	2,030				
d	1500 mm ID 10 mm thick for Transmission mains	m	1,190				
e	1400 mm ID 10 mm thick	m	1,030				
f	1200 mm ID 10 mm thick	m	500				
g	1200 mm ID 20 mm thick	m	30				
h	1000 mm ID 8 mm thick	m	1,770				

## **Guwahati Water Supply Project (JICA Loan No. ID-P201)**

### **Addendum No. 5 (Contract No. C-04) South Central Zone**

---

Dated: November, 26<sup>nd</sup> 2010

#### **Item 1: Changes in Road Reinstatement Specification**

1. Section VI Technical Specifications. Delete Paragraph 4.12 Road Reinstatement, in its entirety and replace it with the Specifications attached to this Addendum No 5.
2. The details (Drawings) of the WBM / Asphalt road reinstatement for the transmission mains are attached to this Addendum No 5

#### **Item No 2: Changes in the Transmission Main Bill-of-Quantity**

1. Page 3 of 15: Item 1.06 WBM Base for restoration of Existing Asphalt Road. Delete the Description, Unit and Quantity in Bill-of Quantities in Addendum No 2 and replace it with the Description, Unit and Quantity in this Addendum No 5.
2. Page 4 of 15 Bituminous Surface for Restoration of Existing Asphalt Road. Delete the Description, Unit and Quantity in Addendum No 2 and replace it with the Description, Unit and Quantity in this Addendum No 5.

#### **Item No 3: Change of Bid Security (Bank Guarantee) Form**

Section IV Bidding Forms. Remove the Bidding Forms in the original document issued and replace it with the Bid Security (Bank Guarantee) form included with this Addendum No 5.

#### **Item No 4: Changes in Bill-of-Quantities**

##### **Narakasur Pumping Station**

1. Page 10 of 15: Item 2.08. Add the Unit as 'Lump Sum' and the Quantity as '1' (One)
2. Page 10 of 15: Item 2.09. Add the Unit as 'Each' and the quantity as '1' (One)

##### **Ramsa Hill 2 Reservoir**

3. Page 6 of 13: Item 1.21. Delete '1' in Quantities column
4. Page 7 of 13: Item 1.26. Delete 'LS' in Unit column and '1' in Quantities column
5. Page 7 of 13: Item 1.27. Delete 'LS' in Unit column and '1' in Quantities column

##### **Sonaghali Reservoir**

6. Page 9 of 15: Item 1.29. Delete 'LS' in Unit column and '1' in Quantities column
7. Page 9 of 15: Item 1.30. Delete 'LS' in Unit column and '1' in Quantities column

##### **Narakasur Reservoir**

8. Page 9 of 15: Item 1.29. Delete 'LS' in Unit column and '1' in Quantities column

##### **Amiya Naggur Reservoir:**

9. Page 9 of 15: Item 1.28. Delete 'LS' in Unit column and '1' in Quantities column

10. Page 9 of 15: Item 1.29. Delete 'LS' in Unit column and '1' in Quantities column

Geeta Nagar 1 Reservoir:

11. Page 9 of 16: Item 1.29. Delete 'LS' in Unit column and '1' in Quantities column

12. Page 9 of 16: Item 1.30. Delete 'LS' in Unit column and '1' in Quantities column

Geeta Nagar 11 Reservoir:

13. Page 9 of 16: Item 1.34. Delete 'LS' in Unit column and '1' in Quantities column

14. Page 9 of 16: Item 1.35. Delete 'LS' in Unit column and '1' in Quantities column

**Item No 5:** The last date of submission of the Bids is extended to 16 December 2010. The time of bid submission and opening of Technical Bids remains the same as specified in the bidding document.

## **4.12 Road Reinstatement**

### **General**

The existing WBM, Asphalt and Concrete roads will be damaged during excavation for laying transmission mains. The roads shall be reinstated to original condition immediately after laying, jointing hydraulic testing of pipelines and refilling of the pipeline trenches is completed. The existing WBM roads shall be reinstated with GSB & WMM surface and the concrete and asphalt roads shall be reinstated with asphalt road surfacing with GSB & WMM base.

### **WBM road**

Reinstatement with WMM shall be in 2 layers as specified below.

### **Granular sub-base**

The granular sub-base shall be of 150 mm compacted thickness and shall consist of close graded grading-I material as shown under table 400.1 of PWD Assam Schedule of Rates for 2009-10. The material shall be mixed in a mechanical mix plant at OMC. The item covers carriage of the material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with roller to achieve the desired density. The item shall be executed as per MoSRT&H specification No. 401 as referred in PWD Assam Schedule of Rates 2009-10.

### **Wet Mix Mecadam**

Over the Granular sub-base a layer of Wet Mix Mecadam for 250 mm compacted thickness with graded stone aggregate shall be provided. The work shall cover premixing the material with water at OMC in mechanical mix plant, carting of the material to work site, laying in uniform layers on well prepared surface and compacting with vibratory roller to achieve the desired density. The item shall be executed as per MoSRT&H specification No. 406 as referred in PWD Assam Schedule of Rates 2009-10.

### **Asphalt road**

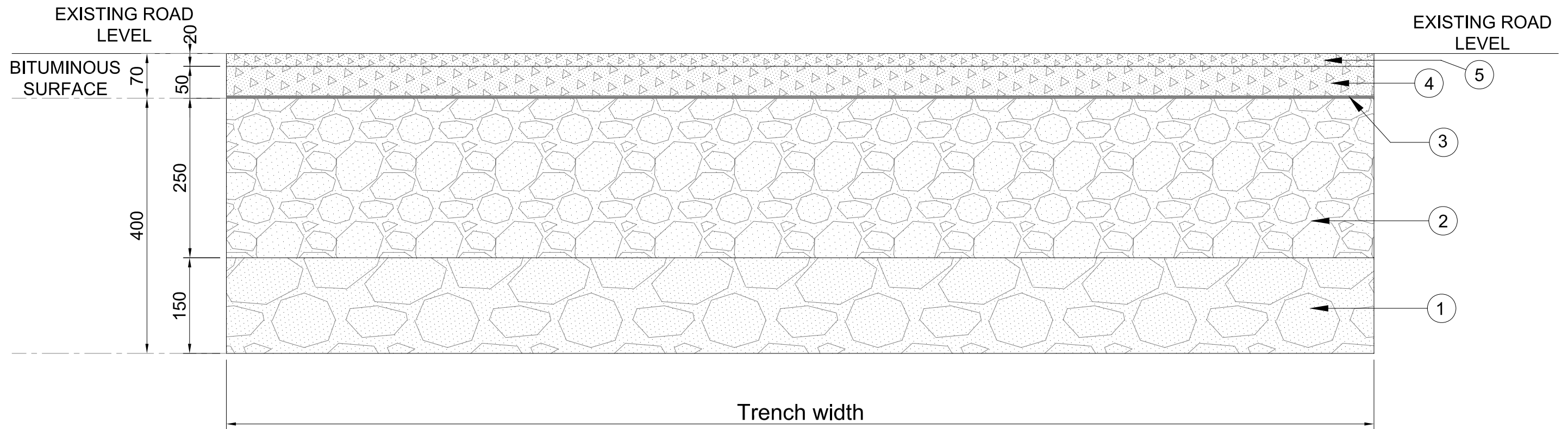
Reinstatement with asphalt surfacing shall be carried out as detailed below.

### **Tack coat**

A Tack coat consisting of bitumen emulsion (for normal bitumen surface) using emulsion pressure distributor at the rate of 0.20 kg per square metre on the prepared granular surface, cleaned with mechanical broom shall be provided over WMM surface. The item shall be executed as per MoSRT&H specification No. 503 as referred in Schedule of Rates 2009-10.

### **Bituminous Mecadam layer**

After applying tack coat, a layer of bituminous macadam without anti stripping agent with 60 / 70 or VG-30 grade paved bitumen with grading-I aggregate (40 mm nominal size), shall be provided for 50 mm compacted thickness. This includes preparation of bituminous macadam with 100-120 TPH hot mix plant using crushed aggregates of grade specified above and premixed with bituminous binder, carriage to the work site, spreading and compacting as directed. The item shall be executed as per MoSRT&H specification No. 504 as referred in PWD Assam Schedule of Rates 2009-10.



REFERENCE	
①	Granular Sub-base with close graded grading-I material as per Table 400.1 of PWD Assam schedule of road for 2009-10 (MOSRTSH Specification 401)
②	Wet Mix macadam with graded stone aggregate (MOSRTSH Specification 406)
③	Bitumen emulsion Tack coat for normal Bituminous surface (MOSRTSH Specification 503)
④	Bitumen macadam grading-I without anti-stripping agent with 60/70 or VG-30 grade paved Bitumen (MOSRTSH Specification 504)
⑤	Pre-mix carpet with anti-stripping agent as per IS:14982 TYPE-B (MOSRTSH Specification 512)

Consultants:  
**PROJECT MANAGEMENT CONSULTANT (PMC)**  
 1st Bylane Lichubari,  
 Near Ganesh Mandir H.S. School  
 Six Mile, Khanapara  
 Guwahati - 781022  
 Tel: +91 361 2360077, 2363123



Project:  
**GUWAHATI WATER SUPPLY PROJECT (GWSP)**  
 (JICA ODA LOAN PROJECT: ID P-201)

Client:  
**GUWAHATI METROPOLITAN DEVELOPMENT AUTHORITY (GMDA)**  
 STATFED Building, Bhangagarh, GMCH Road,  
 Guwahati-5, Assam

REV NO.	DATE	REMARKS
3		
2		
1		
0	Oct-2010	Final- for Tendering purpose

Approved by:	
Checked by:	N.N. MAHAJAN
Drawn by:	A. BARMAN
Design by:	N.N. MAHAJAN
Scale:	Rev:
<b>NTS</b>	0

Title: <b>STANDARD DRAWING FOR REINSTATEMENT OF WBM / ASPHALT ROAD</b>	
Drawing No. <b>GWSP/C#04/Tr-SD/26</b>	Sheet No: <b>26 of 61</b>



### **Premix carpet**

Top layer of premix carpet shall be of 20 mm compacted thickness. The premix carpet shall consist of close graded premix surfacing / mixed seal surfacing with material of type-B as per PWD specifications with anti-stripping agent as per IS: 14982. Mixing shall be with mechanical means using HMP of appropriate capacity. The work covers carting of the material to work site, spreading and rolling as directed. The item shall be executed as per MoSRT&H specification No. 512 as referred in PWD Assam Schedule of Rates 2009-10.

The work shall cover all the costs for testing of the material at site and laboratory as directed. The width for payment of road reinstatement shall be restricted to allowable width for pipeline excavation. Reinstatement of roads for extra width over the allowable shall have to be carried out by the contractor without any extra cost.

## Form of Bid Security (Bank Guarantee)

\_\_\_\_\_

**Beneficiary:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**BID GUARANTEE No.:** \_\_\_\_\_

We have been informed that \_\_\_\_\_ (hereinafter called "the Bidder") has submitted to you its bid dated \_\_\_\_\_ (hereinafter called "the Bid") for the execution of \_\_\_\_\_ under Invitation for Bids No. \_\_\_\_\_ ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we \_\_\_\_\_ hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of (amount in figures) \_\_\_\_\_ (amount in words) (\_\_\_\_\_) upon receipt by our office/branch (Name of issuing Bank at Guwahati, Assam, India where this guarantee is encashable / payable) of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

\_\_\_\_\_

*[signature(s)]*

**Package-4 Transmission Mains for the South Central Zone**

**Bill of Quantities**

Item No.	Description	Unit	Quantity	Rate			Amount		
				Local		Foreign	Local		Foreign
				Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
1.04	Filling in pipeline trenches, foundation, chambers etc. with approved excavated soil (excluding rock) including depositing in layers not exceeding 200 mm in depth, consolidating each deposited layer by ramming and watering including lead up to 50m and lift upto 4.5m, including compaction to achieve 90% Standard Proctor density etc., complete	m <sup>3</sup>	99398						
1.05	Filling in plinth, trench with well graded river sand including watering, ramming, consolidating and dressing complete including cost of sand as per drawing and specifications around pipe to achieve Class N bedding. <b>For soft Rock</b>	m <sup>3</sup>	11044.22						
1.06	<b>SubBase &amp; Base for restoration of existing asphalt/WBM road</b>								
	Providing and constructing granular sub-base with close graded grading-I material for 150 mm compacted thickness and wet mix mecadam with graded stone aggregate for 250 mm thickness including premixing the material with water at OMC in mechanical mixing plant, carting to work side, spreading and compacting etc complete for all leads and lifts as per drawing and specifications	m <sup>2</sup>	56883						

**Package-4 Transmission Mains for the South Central Zone**

**Bill of Quantities**

Item No.	Description	Unit	Quantity	Rate			Amount		
				Local		Foreign	Local		Foreign
				Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
1.07	<b>Bituminous surface for restoration of existing asphalt road</b>								
	Providing and constructing Asphalt road consisting of providing and applying tack coat over WMM surface with bitumen emulsion (for normal bitumen surface), providing and laying bituminous mecadam with 100-120 TPH hot mix plant using crushed aggregates of grading-I material for 50 mm compacted thickness, and providing close graded premix surfacing with material of type-B for 20 mm compacted thickness with mechanical means using HMP of appropriate capacity, including transportation, spreading to required grade, rolling etc complete for all leads and lifts, as per the drawing and specifications.	m <sup>2</sup>	45506						
<b>2.00</b>	<b>Concrete and Allied Works</b>								
2.01	Providing and laying Plain cement concrete M-15 grade PCC for all types of Valve chamber, thrust block, anchor block, antifoatation block etc vibrating mix with respect with vibrations complete in all respect with 40mm/25 stone aggregate (crusher broken) including fine finish of surface to required camber / super elevation and grade including curing as per specifications.	m <sup>3</sup>	10.54						

**Pumping Station at NARKASUR (Revised November 4, 2010)**

Item No.	Description	Unit	Quantity	Rate			Amount		
				Local		Foreign	Local		Foreign
				Basic Rate	Applicable taxes and		Basic Rate	Applicable taxes and	
2.07	Supply and Install Split Unit Air Conditioning for Control Room. Cooling Capacity should not be less than 20,000 BThU/Hr. Operating Voltage 230V	Each	1						
2.08	<b>Washout to Manhole</b>								
	Supplying, installing, 300 mm MS pipe from Surge bypass to manhole. Cost shall include connection to the 300 mm pipe all fittings, all valves, flanges, bends, tees, couplings, reducers enlargers, nuts, bolts and gaskets, sleeve coupling, etc and connecting to the manhole.	LS	1						
2.09	Supply and Install <b>hydrant</b> . Cost shall include excavation, bedding, backfill, pipes, fittings, valves, valve box and all other items to complete installation.	Each	1						
			<b>SUB TOTAL</b>						
<b>3.00</b>	<b>Electrical &amp; Instrumentation Work</b>								
	<b>ELECTRICAL WORKS FOR PUMPS:</b> Manufacturing, Testing at shop floor, Supply, Installation including related civil work like Transformer Base etc, Testing and Commissioning at site the following Items / Systems as per Tender Specification to be located in the Fields and the Control Room .								
3.01	GOD/DO along with CT, PT units for metering, ACSR Conductors, Insulators along with required accessories as per REC standards	Set	1						
3.02	Providing , Laying, Terminations with Lugs and Glands of 11kV grade 3C X 120mm <sup>2</sup> XLPE, aluminum armoured cable	m	30						
3.03	500kVA Power Transformer with Off-Circuit Tap changer 11kV /0.433 kV including Transformer Base	Nos.	2						

## **Guwahati Water Supply Project (JICA Loan No. ID-P201)**

### **Addendum No. 6 (Contract No. C-04) South Central Zone**

---

Dated: December, 2<sup>nd</sup> 2010

#### **Item No 1. Changes to Bill-of-Quantities Access Road.**

Replace the Bill-of-Quantities for the Access Road issued previously with Addendum No. 2 with the revised Bill-of-Quantities included in this Addendum No. 6.

#### **Item No 2. Geotechnical Information**

The PDF File of existing Geotechnical information for the transmission route and the reservoir site is attached to this Addendum No 6. Bidders should also refer to '*Geotechnical Information*' in Section VIA Technical Specifications Subsection 9, page 1 of 15.

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY OPEN DRAIN</b>											
Name of Road: Approach Road At Amiyanagar											
Length of Road = 1222.933 m											
1	12.1	304	<b>Foundation:</b>  <b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>	m <sup>3</sup>	2390.83						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	528.31						
3	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	1693.76						
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	96.00						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub structure</b>								
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering								
			<b>N) Without Plasticiser</b>								
			<b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	73.38						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification								
			A. Random Rubble Masonry	m <sup>3</sup>	1248.31						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	2384.72						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification								
			A. Ganular Material	m <sup>3</sup>	91.72						
			<b>Sub total</b>								
<b>ROAD WORKS</b>											
<b>Name of Road: Approach Road At Amiyanager</b>											
<b>Length of Road = 1222.933 m</b>											
<b>SITE CLEARENCE</b>											
9	2.1	201	<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b>  Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit								
			(I) Girth from 300 mm to 600 mm	each	40						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Clearing and Grubbing Road Land:</b>								
10	2.3	201	Clearing and grubbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.								
			I) By Manual Means								
			A) In area of non thorny jungle	Hect	0.49						
			<b>Dismantling of Structures</b>								
11	2.4	202	Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaryfing wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means								
			a) Lime Concrete, cement concrete M10 grade and below	m <sup>3</sup>	0.50						
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15.00						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>								
			<b>Excavation in Soil with Dozer with lead upto 100 m</b>								
12	3.3	301	Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	32698.94						
			<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b>								
13	3.11	301	Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	27545.88						
			<b>Embankment Construction with Materials obtained from Roadway Cutting</b>								
14	3.17		Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	5153.06						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate		Amount			
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS</b>											
			<b>Sub-Base</b>								
15		Analyzed Item Annexure II	Construction of sub-base coarse 150 mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterous constituents including payments of Forest Royalty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture content to ± 2% of OMC for the entire depth of the layer and compacting the same with power roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tolerance, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as they appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appear controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position	m <sup>3</sup>	733.76						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
16	4.9	404	<p><b>Water Bound Macadam</b> Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)</p> <p><b>(A) By Manual means.</b> <b>I) Grading-II</b> (b) Using Screening Type-A (13.2 mm Agg.)</p> <p><b>II) Grading-III</b> (a) Using Screening Crushable type such as Moorum or Gravel</p>									
<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>												
17	5.1A	502	<p><b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>I)With bitumen emulsion-CSS-1h</b></p>									
18	5.2	503	<p><b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>I)With bitumen emulsion-CSS-1h</b> a) Normal bituminous surface</p>									

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
19	5.10 A	511	<p><b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b></p> <p>I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour</p>	m <sup>2</sup>	4891.73							
			<p><b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A &amp; B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p>									

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
20	5.12	513	<b>a) Without anti-stripping agent</b> <b>I) Case I: Type A</b> providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)	m <sup>2</sup>	4891.73						
<b>Sub total</b>											
<b>CROSS DRAINAGE WORKS (DOUBLE CELL BOX CULVERT 3m x 3m)</b>											
<b>Name of Road: Approach Road At Amiyanagar</b>											
<b>Length of Road = 1222.933 m</b>											
21	12.1	304	<b>Foundation</b> <b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material								
			I. in Ordinary Soil								
			A. Manual Means								
			(i) Upto 3 m depth	m <sup>3</sup>	22.70						
22	12.8A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification								
			N, Without Plasticiser								
			A P.C.C. grade M15	m <sup>3</sup>	2.78						
			C. R.C.C. Grade M20								
			CASE I Using Concrete Mixer	m <sup>3</sup>	3.60						
23	12.4	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.36						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Substructure</b>								
24	13.5A	1500, 1700 & 220	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204 N, Without Plasticiser E. RCC M20 grade a. height upto 5 m CASE I Using Concrete Mixer	m <sup>3</sup>	16.11						
25	13.6B	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	1.61						
26	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	14.40						
			<b>Superstructure</b>								
27	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticier (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticier (Masterplast PAE or equivalent) and acclerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework N, Without Plasticiser A RCC m20 grade CASE I Using Concrete Mixer I) FOR SOLID SLAB (p) Height upto 5 m	m <sup>3</sup>	8						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate		Amount			
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
28	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.84						
29	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	16						
<b>Sub Total</b>											
<b>CROSS DRAINAGE WORKS (BOX CULVERT 1.5m x 1.5m)</b>											
<b>Name of Road: Approach Road At Amiyanagar</b>											
<b>Length of Road = 1222.933 m</b>											
<b>Foundation</b>											
30	12.1	3.4	<b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material								
			I. in Ordinary Soil								
			A. Manual Means								
			(i) Upto 3 m depth	m <sup>3</sup>	77.19						
31	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification								
			N, Without Plasticiser								
			A P.C.C. grade M15	m <sup>3</sup>	6.60						
			C. R.C.C. Grade M20								
			CASE I Using Concrete Mixer	m <sup>3</sup>	27.00						
32	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	2.70						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate		Amount			
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Substructure</b>								
33	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204 N, Without Plasticiser E. RCC M20 grade a. height upto 5 m CASE I Using Concrete Mixer	m <sup>3</sup>	38.85						
34	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	3.885						
35	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	54.00						
36	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticiser (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticiser (Masterplast PAE or equivalent) and accelerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework N, Without Plasticiser A RCC m20 grade CASE I Using Concrete Mixer I) FOR SOLID SLAB (p) Height upto 5 m	m <sup>3</sup>	10.00						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate		Amount			
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
37	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	1.00						
38	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	32.00						
<b>Sub Total</b>											
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Amiyanagar</b>											
<b>Length of Road = 1222.933 m</b>											
<b>Foundation</b>											
39	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	i		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	5,299.83						
40	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. (c).Stone soling 150mm thick	m <sup>2</sup>	1,000.35						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
41	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	150.05						
			<b>Sub-Structure</b>								
42	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification								
			A. Random Rubble Masonry	m <sup>3</sup>	2,589.20						
43	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	1,692.90						
44	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	1,504.00						
45	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	202.50						
			<b>Sub Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Amiya Nagar - Access Road  
Bill of Quantities**

Sr No.	Item no.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY TOE WALL (1.5m HEIGHT)</b>											
<b>Name of Road: Approach Road At Amiyanagar</b>											
<b>Length of Road = 1222.933 m</b>											
			<b>Foundation</b>								
46	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	V		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	ii		<b>With dewatering</b>	m <sup>3</sup>	2,017.37						
47	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.  (c).Stone soling 150mm thick	m <sup>2</sup>	627.00						
48	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	62.70						
49	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification  a. Random Rubble Masonry	m <sup>3</sup>	925.77						
50	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	577.50						
			<b>Sub Total</b>								
			<b>Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY OPEN DRAIN</b>											
<b>Name of Road: Approach Road At Geeta Mandir (Main Reservoir)</b>											
<b>Length of Road = 253.463 m</b>											
<b>Foundation</b>											
1	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>		811.0855125						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	145.760295						
3	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.  (c).Stone soling 150mm thick	m <sup>3</sup>	485.86765						
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	29.778985						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub-Structure</b>								
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering <b>N) Without Plasticiser</b> <b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	18.80778						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	550.127565						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	783.6575						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification A. Ganular Material	m <sup>3</sup>	23.509725						
					<b>SUB TOTAL</b>						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>ROAD WORK</b>											
<b>Name of Road: Approach Road At Geeta Mandir (Main Reservoir)</b>											
<b>Length of Road = 253.463 m</b>											
<b>SITE CLEARENCE</b>											
9	2.1	201	<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b>								
			Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit								
			(I) Girth from 300 mm to 600 mm	each	40						
<b>Clearing and Grubbing Road Land:</b>											
10	2.3	201	Clearing and grubbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.								
			I) By Manual Means								
			A) In area of non thorny jungle	Hect	0.10						
<b>Dismantling of Structures</b>											
11	2.4	202	Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaryfing wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means	m <sup>3</sup>	0.5						
			a) Lime Concrete, cement concrete M10 grade and below								
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>								
			<b>Excavation in Soil with Dozer with lead upto 100 m</b>								
12	3.3	301	Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	10675.09						
			<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b>								
13	3.11	301	Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	10586.80						
			<b>Embankment Construction with Materials obtained from Roadway Cutting</b>								
14	3.17		Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	88.29						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS</b>								
			<b>Sub-Base</b>								
15		Analyzed Item Annexure II	Construction of sub-base coarse 150mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterous constituents including payments of Forest Royalaty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture content to ± 2% of OMC for the entire depth of the layer and compacting the same with power roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tolerance, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as they appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appear controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position.	m <sup>3</sup>	155						
			<b>Water Bound Macadam</b>								
			Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
16	4.9	404	<b>(A) By Manual means.</b>								
			<b>I) Grading-II</b>								
			(b) Using Screening Type-A (13.2 mm Agg.)	m <sup>3</sup>	101.3852						
			<b>II) Grading-III</b>								
			(a) Using Screening Crushable type such as Moorum or Gravel	m <sup>3</sup>	76.0389						
			<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>								
17	5.1A	502	<b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>	m <sup>2</sup>	1013.85						
18	5.2	503	<b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>								
			a) Normal bituminous surface	m <sup>2</sup>	1013.85						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
19	5.10 A	511	<p><b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b></p> <p>I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour</p>	m <sup>2</sup>	1013.85							
			<p><b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A &amp; B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p>									

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
20	5.12	513	<b>a) Without anti-stripping agent</b>								
			<b>I) Case I: Type A</b>								
			providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)	m <sup>2</sup>	1013.85						
			<b>Sub Total</b>								
<b>CROSS DRAINAGE WORKS (BOX CULVERT)</b>											
<b>Name of Road: Approach Road At Geeta Mandir (Main Reservoir)</b>											
<b>Length of Road = 253.463 m</b>											
21	12.1	304	<b>Excavation for Structures</b>								
			Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material								
			I. in Ordinary Soil								
			A. Manual Means								
			(i) Upto 3 m depth	m <sup>3</sup>	102.97						
22	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification								
			N, Without Plasticiser								
			A P.C.C. grade M15	m <sup>3</sup>	3.24						
			C. R.C.C. Grade M20								
			CASE I Using Concrete Mixer	m <sup>3</sup>	7.29						
23	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.73						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Substructure</b>								
24	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204 N, Without Plasticiser E. RCC M20 grade a. height upto 5 m CASE I Using Concrete Mixer	m <sup>3</sup>	20.04						
25	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	2.00						
26	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	28.80						
			<b>Superstructure</b>								
27	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticiser (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticiser (Masterplast PAE or equivalent) and acclerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework N, Without Plasticiser A RCC m20 grade CASE I Using Concrete Mixer I) FOR SOLID SLAB (p) Height upto 5 m	m <sup>3</sup>	7.50						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
28	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	0.75						
29	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	24.00						
<b>Sub Total</b>											
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Geeta Mandir (Main Reservoir)</b>											
<b>Length of Road = 253.463 m</b>											
<b>Foundation</b>											
30	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	1884.38						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (I) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
31	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. (c).Stone soling 150mm thick	m <sup>2</sup>	355.68						
32	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	53.35						
			<b>Sub-Structure</b>								
33	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	920.60						
34	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	601.92						
35	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	540						
36	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	72						
			<b>Sub Total</b>								
			<b>Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY OPEN DRAIN</b>											
<b>Name of Road: Approach Road At Geetanagar (Sub Reservoir)</b>											
<b>Length of Road = 698.339 m</b>											
			<b>Foundation</b>								
1	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>	m <sup>3</sup>	2339.51						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	516.96						
3	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	1657.40						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	93.94						
			<b>Sub-Structure</b>								
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering <b>N) Without Plasticiser</b> <b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	71.80						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification  A. Random Rubble Masonry	m <sup>3</sup>	1221.51						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	2333.52						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification  A. Ganular Material	m <sup>3</sup>	89.75						
			<b>SUB TOTAL</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
<b>Road works</b>												
<b>Name of Road: Approach Road At Geetanagar (Sub Reservoir)</b>												
<b>Length of Road = 698.339 m</b>												
<b>SITE CLEARANCE</b>												
9	2.1	201	<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b>									
			Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit									
			(I) Girth from 300 mm to 600 mm	each	80							
10	2.3	201	<b>Clearing and Grubbing Road Land:</b>									
			Clearing and grabbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.									
			I) By Manual Means									
			A) In area of non thorny jungle	Hect	0.28							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Dismantling of Structures</b>								
11	2.4	202	Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaryfing wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means								
			a) Lime Concrete, cement concrete M10 grade and below	m <sup>3</sup>	0.50						
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15						
			<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>								
			<b>Excavation in Soil with Dozer with lead upto 100 m</b>								
12	3.3	301	Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	17510.54						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
13	3.11	301	<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b>								
			Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	14008.43						
			<b>Embankment Construction with Materials obtained from Borrow Pits</b>								
14	3.16	305	Construction of embankment with materials obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2 (including compensation of earth) (Including cost of testing of materials at site and laboratory as directed by the deptt.)								
			(b) from Govt. Land	m <sup>3</sup>	4843.68						
			<b>Embankment Construction with Materials obtained from Roadway Cutting</b>								
15	3.17		Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	3502.11						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS</b>								
16		<b>Analyzed Item Annexure II</b>	<b>Sub-Base</b> Construction of sub-base coarse 150mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterous constituents including payments of Forest Royalaty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture content to $\pm$ 2% of OMC for the entire depth of the layer and compacting the same with power roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tolerance, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as they appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appear controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position	m <sup>3</sup>	419.00						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
17	4.9	404	<b>Water Bound Macadam</b> Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)								
			<b>(A) By Manual means.</b>								
			<b>I) Grading-II</b>								
			(b) Using Screening Type-A (13.2 mm Agg.)	m <sup>3</sup>	279.34						
			<b>II) Grading-III</b>								
			(a) Using Screening Crushable type such as Moorum or Gravel	m <sup>3</sup>	209.50						
<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>											
18	5.1A	502	<b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)	m <sup>2</sup>	2793.36						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>I)With bitumen emulsion-CSS-1h</b>								
19	5.2	503	<b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>								
			a) Normal bituminous surface	m <sup>2</sup>	2793.36						
20	5.10 A	511	<b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>a) Without anti-stripping agent</b>								
			I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour	m <sup>2</sup>	2793.36						
			<b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A & B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>a) Without anti-stripping agent</b>								
			<b>I) Case I: Type A</b> providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)	m <sup>2</sup>	2793.36						
			<b>Sub Total</b>								
<b>CROSS DRAINAGE WORKS (BOX CULVERT)</b>											
<b>Name of Road: Approach Road At Geetanagar (Sub Reservoir)</b>											
<b>Length of Road = 698.339 m</b>											
			Foundation								
22	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material								
			I. in Ordinary Soil								
			A. Manual Means								
			(i) Upto 3 m depth	m <sup>3</sup>	171.62						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
23	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification									
			N, Without Plasticiser									
			A P.C.C. grade M15	m <sup>3</sup>	5.4							
			C. R.C.C. Grade M20									
			CASE I Using Concrete Mixer	m <sup>3</sup>	12.15							
24	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications									
			c With other make ISI marked TMT rebars	Tonne	1.215							
<b>Sub Structure</b>												
25	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204									
			N, Without Plasticiser									
			E. RCC M20 grade									
			a. height upto 5 m									
			CASE I Using Concrete Mixer	m <sup>3</sup>	33.4							
26	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications									
			c With other make ISI marked TMT rebars	Tonne	3.34							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
27	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	48						
			<b>Super Structure</b>								
28	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticiser (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticiser (Masterplast PAE or equivalent) and accelerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework								
			N, Without Plasticiser								
			A RCC m20 grade								
			CASE I Using Concrete Mixer								
			I) FOR SOLID SLAB								
			(p) Height upto 5 m	m <sup>3</sup>	12.5						
29	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	1.25						
30	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	40						
			<b>SUB TOTAL</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Geeta Nagar (II) - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Geetanagar (Sub Reservoir)</b>											
<b>Length of Road = 698.339 m</b>			<b>Foundation</b>								
31	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	4710.96						
32	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.  (c).Stone soling 150mm thick	m <sup>2</sup>	889.2						
33	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	133.38						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone**  
**Geeta Nagar (II) - Access Road**  
**Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub-Structure</b>								
34	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification								
			A. Random Rubble Masonry	m <sup>3</sup>	2301.51						
35	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	1504.8						
36	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	1340						
37	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	180						
			<b>Sub Total</b>								
			<b>Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>Structures/Drains</b>											
<b>Name of Road: Approach Road At Lichubagan</b>											
<b>Length of Road = 622.127 m</b>											
<b>Foundation</b>											
1	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Marshy Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>	m <sup>3</sup>	1959.16						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	432.92						
3	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	1387.95						
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	78.67						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>Sub structure</b>											
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering <b>N) Without Plasticiser</b> <b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	60.13						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	1022.92						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	1954.15						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification A. Ganular Material	m <sup>3</sup>	75.16						
<b>Sub Total</b>											
<b>ROAD WORKS</b>											
<b>Name of Road: Approach Road At Lichubagan</b>											
<b>Length of Road = 622.127 m</b>											
<b>SITE CLEARENCE</b>											
9	2.1	201	<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b> Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit (I) Girth from 300 mm to 600 mm (II) Girth from 600 mm to 900 mm (III) Girth from 900 mm to 1800 mm	each	50 20 5						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Clearing and Grubbing Road Land:</b>								
10	2.3	201	Clearing and grubbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.								
			I) By Manual Means								
			A) In area of non thorny jungle	Hect	0.25						
			<b>Dismantling of Structures</b>								
11	2.4	202	Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaryfing wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means								
			a) Lime Concrete, cement concrete M10 grade and below	m <sup>3</sup>	0.50						
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15.00						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>											
			<b>Excavation in Soil with Dozer with lead upto 100 m</b>								
12	3.3	301	Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	31124.49						
			<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b>								
13	3.11	301	Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	29771.08						
			<b>Embankment Construction with Materials obtained from Roadway Cutting</b>								
14	3.17		Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	1353.41						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS</b>								
			<b>Sub-Base</b>								
15		Analyzed Item Annexure II	Construction of sub-base coarse 150mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterous constituents including payments of Forest Royalty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture content to $\pm 2\%$ of OMC for the entire depth of the layer and compacting the same with power roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tolerance, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as they appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appear controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position	m <sup>3</sup>	373.28						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
16	4.9	404	<p><b>Water Bound Macadam</b> Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)</p> <p><b>(A) By Manual means.</b> <b>I) Grading-II</b> (b) Using Screening Type-A (13.2 mm Agg.)</p> <p><b>II) Grading-III</b> (a) Using Screening Crushable type such as Moorum or Gravel</p>									
				m <sup>3</sup>	248.85							
				m <sup>3</sup>	186.64							
			<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>									
17	5.1A	502	<p><b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>I)With bitumen emulsion-CSS-1h</b></p>									
				m <sup>2</sup>	2488.51							
18	5.2	503	<p><b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>I)With bitumen emulsion-CSS-1h</b> a) Normal bituminous surface</p>									
				m <sup>2</sup>	2488.51							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
19	5.10 A	511	<p><b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b></p> <p>I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour</p>	m <sup>2</sup>	2488.51						
20	5.12	513	<p><b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A &amp; B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b></p> <p><b>I) Case I: Type A</b> providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)</p>	m <sup>2</sup>	2488.51						
			<b>Sub Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CROSS DRAINAGE WORKS (BOX CULVERT 4 NOS.)</b>											
<b>Name of Road: Approach Road At Lichubagan</b>											
<b>Length of Road = 622.127 m</b>											
<b>Foundation</b>											
21	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material								
			I. in Ordinary Soil								
			A. Manual Means								
			(i) Upto 3 m depth	m <sup>3</sup>	130.42						
22	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification								
			N, Without Plasticiser								
			A P.C.C. grade M15	m <sup>3</sup>	4.16						
			C. R.C.C. Grade M20								
			CASE I Using Concrete Mixer	m <sup>3</sup>	9.36						
23	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.94						
<b>Substructure</b>											
24	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204								
			N, Without Plasticiser								
			E. RCC M20 grade								
			a. height upto 5 m								
			CASE I Using Concrete Mixer	m <sup>3</sup>	26.72						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
25	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications									
			c With other make ISI marked TMT rebars	Tonne	2.67							
26	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	48.00							
			<b>Superstructure</b>									
27	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticier (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticier (Masterplast PAE or equivalent) and acclerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework									
			N, Without Plasticiser									
			A RCC m20 grade									
			CASE I Using Concrete Mixer									
			I) FOR SOLID SLAB									
			(p) Height upto 5 m	m <sup>3</sup>	10.08							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
28	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	1.01						
29	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	32.00						
<b>Sub Total</b>											
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Lichubagan</b>											
<b>Length of Road = 622.127 m</b>											
<b>Foundation</b>											
30	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	6642.45						
31	17.56		Providing brick soling in foundation and under floor with stone/best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. (c).Stone soling 150mm thick	m <sup>2</sup>	1253.77						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Lichubagan - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
32	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	188.07						
			<b>Sub-Structure</b>								
33	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification								
			A. Random Rubble Masonry	m <sup>3</sup>	3245.13						
34	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	2121.77						
35	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	1884.00						
36	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	1195.00						
			<b>Sub Total</b>								
			<b>Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone**  
**Narakasur - Access Road**  
**Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY OPEN DRAIN</b>											
<b>Name of Road: Approach Road At Narakasur Hill</b>											
<b>Length of Road = 1894.732 m</b>											
			<b>Foundation</b>								
1	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>	m <sup>3</sup>	6470.00						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	1429.69						
3	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	4583.61						
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	259.79						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub-Structure</b>								
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering <b>N) Without Plasticiser</b> <b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	198.57						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	3378.14						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	6453.45						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification A. Ganular Material	m <sup>3</sup>	248.21						
			<b>Sub Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>ROAD WORKS</b>											
<b>Name of Road: Approach Road At Narakasur Hill</b>											
<b>Length of Road = 1894.732 m</b>											
<b>SITE CLEARENCE</b>											
9	2.1	201	<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b>								
			Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit								
			(I) Girth from 300 mm to 600 mm	each	40						
<b>Clearing and Grubbing Road Land:</b>											
10	2.3	201	Clearing and grubbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.								
			I) By Manual Means								
			A) In area of non thorny jungle	Hect	0.76						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
11	2.4	202	<b>Dismantling of Structures</b>								
			Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scarrying wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means								
			a) Lime Concrete, cement concrete M10 grade and below	m <sup>3</sup>	0.5						
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15						
			<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>								
12	3.3	301	<b>Excavation in Soil with Dozer with lead upto 100 m</b>								
			Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	172500.921						
13	3.11	301	<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b>								
			Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	169676.781						
14	3.17		<b>Embankment Construction with Materials obtained from Roadway Cutting</b>								
			Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	2824.14						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS</b>								
			<b>Sub-Base</b>								
15		Analyzed Item Annexure II	Construction of sub-base coarse 150mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterious constituents including payments of Forest Royalaty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture contern to ± 2% of OMC for the entire depth of the layer and compacting the same wit hpower roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tollerence, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as the appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appera controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position	m <sup>3</sup>	1136.84						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
16	4.9	404	<b>Water Bound Macadam</b> Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)								
			<b>(A) By Manual means.</b>								
			<b>I) Grading-II</b> (b) Using Screening Type-A (13.2 mm Agg.)	m <sup>3</sup>	757.89						
			<b>II) Grading-III</b> (a) Using Screening Crushable type such as Moorum or Gravel	m <sup>3</sup>	568.42						
			<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>								
17	5.1A	502	<b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>	m <sup>2</sup>	7578.93						
18	5.2	503	<b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>								
			a) Normal bituminous surface	m <sup>2</sup>	7578.93						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
19	5.10 A	511	<p><b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b></p> <p>I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour</p>	m <sup>2</sup>	7578.93						
20	5.12	513	<p><b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A &amp; B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b></p> <p><b>I) Case I: Type A</b> providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)</p>	m <sup>2</sup>	7578.93						
<b>Sub Total</b>											
<b>CROSS DRAINAGE WORKS (BOX CULVERT)</b>											
Name of Road: Approach Road At Narakasur Hill											
Length of Road = 1894.732 m											
<b>Foundation</b>											

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
21	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material									
			I. in Ordinary Soil									
			A. Manual Means									
			(i) Upto 3 m depth	m <sup>3</sup>	163.03							
22	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification									
			N, Without Plasticiser									
			A P.C.C. grade M15	m <sup>3</sup>	5.2							
			C. R.C.C. Grade M20									
			CASE I Using Concrete Mixer	m <sup>3</sup>	11.7							
23	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications									
			c With other make ISI marked TMT rebars	Tonne	1.17							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Substructure</b>								
24	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204								
			N, Without Plasticiser								
			E. RCC M20 grade								
			a. height upto 5 m								
			CASE I Using Concrete Mixer	m <sup>3</sup>	33.4						
25	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	3.34						
26	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	60.00						
			<b>Superstructure</b>								



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
27	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticier (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticier (Masterplast PAE or equivalent) and acclerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework N, Without Plasticiser A RCC m20 grade CASE I Using Concrete Mixer I) FOR SOLID SLAB (p) Height upto 5 m	m <sup>3</sup>	12.60						
28	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications c With other make ISI marked TMT rebars	Tonne	1.26						
29	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	40.00						
<b>Sub Total</b>											
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Narakasur Hill</b>											
<b>Length of Road = 1894.732 m</b>											
30	12.1	304	Foundation <b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	6124.25						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
31	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. (c).Stone soling 150mm thick	m <sup>2</sup>	1155.96						
32	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	173.39						
33	13.1	1300 & 2200	<b>Sub-Structure</b> <b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	2991.96						
34	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	1956.24						
35	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	1740.00						
36	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	234.00						
<b>Sub Total</b>											

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Narakasur - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY TOE WALL (1.2m HEIGHT)</b>											
Name of Road: RAM NAGAR ROAD											
Ward: 12											
Length of Road = 140.00 m											
<b>Foundation</b>											
37	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	V		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	ii		<b>With dewatering</b>	m <sup>3</sup>	713.95						
38	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.  (c).Stone soling 150mm thick	m <sup>2</sup>	252.00						
39	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	25.20						
<b>Sub-Structure</b>											
40	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification  a. Random Rubble Masonry	m <sup>3</sup>	323.14						
41	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	230.40						
				<b>Sub Total</b>							
				<b>Total</b>							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY OPEN DRAIN</b>											
<b>Name of Road: Approach Road At Ramsa Hill</b>											
<b>Length of Road = 907.131 m</b>											
1	12.1	304	<b>Foundation</b> <b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>	m <sup>3</sup>	3365.873372						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	633.3640146						
3	17.56		Providing brick soling in foundation and under floor with stone/best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	2091.793548						
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	125.9514948						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub-Structure</b>								
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering <b>N) Without Plasticiser</b> <b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	83.22786						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	2151.273725						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	3273.62916						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification	m <sup>3</sup>	104.034825						
			<b>Sub Total</b>								
<b>ROAD WORKS</b>											
<b>Name of Road: Approach Road At Ramsa Hill</b>											
<b>Length of Road = 907.131 m</b>											
			<b>SITE CLEARANCE</b>								
			<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b>								
9	2.1	201	Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit (I) Girth from 300 mm to 600 mm	each	40						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
10	2.3	201	<b>Clearing and Grubbing Road Land:</b> Clearing and grabbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.								
			I) By Manual Means								
			A) In area of non thorny jungle	Hect	0.36						
11	2.4	202	<b>Dismantling of Structures</b> Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaryfing wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means								
			a) Lime Concrete, cement concrete M10 grade and below	m <sup>3</sup>	0.50						
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15.00						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>								
12	3.3	301	<b>Excavation in Soil with Dozer with lead upto 100 m</b> Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	60453.53						
13	3.11	301	<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b> Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	48362.83						
14	3.16	305	<b>Embankment Construction with Materials obtained from Borrow Pits</b> Construction of embankment with materials obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2 (including compensation of earth) (Including cost of testing of materials at site and laboratory as directed by the deptt.) (b) from Govt. Land	m <sup>3</sup>	10546.38						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
15	3.17		<b>Embankment Construction with Materials obtained from Roadway Cutting</b> Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	12090.71						
<b>SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS</b>											
16		Analyzed Item Annexure II	<b>Sub-Base</b> Construction of sub-base coarse 150mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterous constituents including payments of Forest Royalaty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture content to ± 2% of OMC for the entire depth of the layer and compacting the same with hpower roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tolerance, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as they appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appera controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position.	m <sup>3</sup>	748.28						



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
9	4.9	404	<b>Water Bound Macadam</b> Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)								
			<b>(A) By Manual means.</b>								
			<b>I) Grading-II</b>								
			(b) Using Screening Type-A (13.2 mm Agg.)	m <sup>3</sup>	498.85						
			<b>II) Grading-III</b>								
			(a) Using Screening Crushable type such as Moorum or Gravel	m <sup>3</sup>	374.14						
			<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>								
17	5.1A	502	<b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>I)With bitumen emulsion-CSS-1h</b>	m <sup>2</sup>	4988.52						
18	5.2	503	<b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>								
			a) Normal bituminous surface	m <sup>2</sup>	4988.52						
19	5.10 A	511	<b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>a) Without anti-stripping agent</b>								
			I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour	m <sup>2</sup>	4988.52						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount			
						Local		Foreign	Local		Foreign	
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.		
20	5.12	513	<b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A & B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)									
			<b>a) Without anti-stripping agent</b>									
			<b>I) Case I: Type A</b> providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)	m <sup>2</sup>	4988.52							
<b>Sub Total</b>												
<b>CROSS DRAINAGE WORKS (BOX CULVERT)</b>												
<b>Name of Road: Approach Road At Ramsa Hill</b>												
<b>Length of Road = 907.131 m</b>												
			<b>Foundation</b>									
21	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material									
			I. in Ordinary Soil									
			A. Manual Means (i) Upto 3 m depth	m <sup>3</sup>	36.41							

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
22	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification								
			N, Without Plasticiser								
			A P.C.C. grade M15	m <sup>3</sup>	3.84						
			C. R.C.C. Grade M20 CASE I Using Concrete Mixer	m <sup>3</sup>	8.64						
23	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.86						
24	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204								
			N, Without Plasticiser								
			E. RCC M20 grade								
			a. height upto 5 m CASE I Using Concrete Mixer	m <sup>3</sup>	38.04						
25	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	3.80						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
26	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	72.00						
			<b>Superstructure</b>								
27	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticier (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticier (Masterplast PAE or equivalent) and acclerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework								
			N, Without Plasticiser								
			A RCC m20 grade								
			CASE I Using Concrete Mixer								
			I) FOR SOLID SLAB								
			(p) Height upto 5 m	m <sup>3</sup>	7.50						
28	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.75						
29	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	24.00						
			<b>Sub Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Ramsa Hill</b>											
<b>Length of Road = 907.131 m</b>											
			<b>Foundation</b>								
30	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	5770.92						
31	17.56		Providing brick soling in foundation and under floor with stone/best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	1089.27						
32	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	163.39						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Ramsahill - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub-Structure</b>								
33	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification	m <sup>3</sup>	2819.35						
			A. Random Rubble Masonry								
34	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	1843.38						
35	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	1640.00						
36	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	220.50						
			<b>Sub Total</b>								
			<b>Total</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY OPEN DRAIN</b>											
<b>Name of Road: Approach Road At Sonaighuli</b>											
<b>Length of Road = 626.781 m</b>											
<b>Foundation</b>											
1	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto 3 m height</b>	m <sup>3</sup>	3027.35						
2	12.3	304	Sand Filling in foundation trenches as per drawing and technical specification	m <sup>3</sup>	571.62						
3	17.56		Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	1886.61						
4	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	113.45						
<b>Sub-Structure</b>											



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
5	13.5	1500, 1700 & 2200	<b>Plain/Reinforced Cement Concrete</b> in sub-structure complete as per drawing and technical specification and steel shuttering <b>N) Without Plasticiser</b> <b>A. P.C.C. Grade M15</b> Height upto 5m	m <sup>3</sup>	75.21						
6	13.4	1400 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	1926.41						
7	13.3	1300 & 2200	<b>Plastering</b> with cement mortar (1:3) on brick work in sub-structure as per Technical Specifications	m <sup>2</sup>	2945.87						
8	13.9	710.1.4 of IRC:78 & 2200	<b>Back Filling</b> behind abutment, wing wall and return wall complete as per drawing & technical specification A. Ganular Material	m <sup>3</sup>	94.02						
<b>Sub Total</b>											

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>ROAD WORKS</b>											
<b>Name of Road: Approach Road At Sonaighuli</b>											
<b>Length of Road = 626.781 m</b>											
			<b>SITE CLEARANCE</b>								
			<b>Cutting of Trees, Including Cutting of Trunks, Branches and Removal</b>								
9	2.1	201	Cutting of Trees, Including Cutting of Trunks, Branches and Removal of stumps, roots, stacking of serviceable material and upto a lead of 1000 mts and earth filling in depression/pit								
			(I) Girth from 300 mm to 600 mm	each	40						
			<b>Clearing and Grubbing Road Land:</b>								
10	2.3	201	Clearing and grabbing road land including uprooting rank vegetation, grass, brush, shrubs sapling and trees of girth upto 300mm removal of stumps, disposal of unserviceable materials and slaking of serviceable material to be used or auctioned upto a lead of 1000m including removal and disposal of top organic and not exceeding 150 mm in thickness.								
			I) By Manual Means								
			A) In area of non thorny jungle	Hect	0.2507124						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Dismantling of Structures</b>								
11	2.4	202	Dismantling of existing structures like culverts, bridges, retaining wall, and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaryfing wherever necessary, sorting the dismantled material, disposal of unserviceable material with all lifts and leads of 1000 metres								
			I) Lime / Cement Concrete								
			A) By Manual means								
			a) Lime Concrete, cement concrete M10 grade and below	m <sup>3</sup>	0.5						
			III) Dismantling Stone Masonry								
			b) Rubble Masonry in cement mortar	m <sup>3</sup>	15						
			<b>EARTHWORK, EROSION CONTROL AND DRAINAGE</b>								
			<b>Excavation in Soil with Dozer with lead upto 100 m</b>								
12	3.3	301	Excavation for roadway in Soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 metres (average lead of 50 m), including trimming bottom of side slopes in accordance with requirements of lines, grades and cross sections	m <sup>3</sup>	12262.48						
			<b>Removal of Unserviceable Soil with Disposal upto 1000 metres</b>								
13	3.11	301	Removal of Unserviceable Soil with Disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid seperately as per clause 305)	m <sup>3</sup>	10472.32						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
14	3.17		<b>Embankment Construction with Materials obtained from Roadway Cutting</b>								
			Construction of embankment with approved materials deposited at site from roadway cutting and excavation of drains and foundations of other structures graded and compacted to meet requirement of table 300-2	m <sup>3</sup>	1790.16						
15		Analyzed Item Annexure II	<b>Sub-Base</b>								
			Construction of sub-base coarse 150mm compacted thickness by stone dust in single layer of 180 mm loose thickness including collection and supply stone dust coming out as by product during crusher running consisting of hard quarry chipping, machine broken and of size 10mm down as per IRC grading free from dust, dirt and other organic and deleterious constituents including payments of Forest Royalty and Sales Tax, including preparation of sub-base to specified profile and grade after removal of all vegetation and extraneous material if any, dressing, cambering lightly sprinkling with water and rolling with adequate passes of 8-10T roller till the stone dust sub-grade is properly compacted. Spreading the granular materials between prepared shoulders in layers not exceeding 150mm( loose thickness, dressing, watering to bring the moisture content to ± 2% of OMC for the entire depth of the layer and compacting the same with power roller 8-10T capacity, adding or removing materials if necessary to keep the longitudinal and cross profile of the surface within permissible tolerance, checking the same with templates and straight edges, continue rolling and correcting surface irregularities as they appear within permissible tolerance checking the same with template and straight edges continue rolling and correcting surface irregularities as they appear controlling moisture content of maintaining the same above the OMC and compacting to 95% proctor density (collection of stone dust to be made from barpathar stone quarry) and measurement will be taken on the finished compacted work in position	m <sup>3</sup>	376.07						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
16	4.9	404	<b>Water Bound Macadam</b> Providing, Laying, Spreading and compacting stone aggregates of specific size to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 80-100 kN in stages to proper grade and camber, applying and brooming, stone screening/binding materials to fill up the interstices of coarses aggregate, watering and compacting to the required density (with an initial lead of 5 km)								
			<b>(A) By Manual means.</b>								
			<b>I) Grading-II</b>								
			(b) Using Screening Type-A (13.2 mm Agg.)	m <sup>3</sup>	250.71						
			<b>II) Grading-III</b>								
			(a) Using Screening Crushable type such as Moorum or Gravel	m <sup>3</sup>	188.03						
<b>BASES &amp; SURFACE COURSES (BITUMINOUS)</b>											
17	5.1A	502	<b>Prime Coat</b> Providing and applying primer coat with Bituminous emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.60kg/sqm using mechanical means.(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>	m <sup>2</sup>	2507.12						
18	5.2	503	<b>Tack Coat</b> i) Providing and applying Tack Coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20kg per sqm. on the prepared bituminous surface cleaned with mechanical broom as per Technical Specification Clause 503(including cost of testing of materials at site and at laboratory as directed by the deptt.)								
			<b>I)With bitumen emulsion-CSS-1h</b>								
			a) Normal bituminous surface	m <sup>2</sup>	2507.12						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
19	5.10 A	511	<p><b>Open Graded Premix Surfacing</b> Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen (60/70 grade) or bitumen emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 T static roller capacity to required level and grades (Including carriage upto initial lead of 5 km from quarry and carriage of mixed materials upto 10.0 km initial lead from mixing plant)(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b> I) Case I: Mechanical Method using Penetration grade Bitumen and HMP of appropriate capacity not less than 75 tonnes/hour</p>	m <sup>2</sup>	2507.12						
20	5.12	513	<p><b>Seal Coat</b> Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A &amp; B seal coats(including cost of testing of materials at site and at laboratory as directed by the deptt.)</p> <p><b>a) Without anti-stripping agent</b> I) Case I: Type A providing and laying liquid seal coat comprising of a layer of bituminous binder (paving bitumen 60/70 grade) followed by a cover of crushed stone chipping of specified grade (including carriage upto initial lead of 5 km from quarry)</p>	m <sup>2</sup>	2507.12						
			<b>Sub Total</b>								
<b>CROSS DRAINAGE WORKS (BOX CULVERT)</b>											
<b>Name of Road: Approach Road At Sonaighuli</b>											
<b>Length of Road = 626.781 m</b>											
			<b>Foundation</b>								

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
21	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation of structures as per drawing and technical specification clause including setting out, construction of shoring and bracing, removal of stumps and other deleterious material, dressing of sides & bottom and backfilling with approved material								
			I. in Ordinary Soil								
			A. Manual Means								
			(i) Upto 3 m depth	m <sup>3</sup>	106.624						
22	12.8 A	1500, 1700 & 2100	Providing concrete for plain/reinforced concrete in open foundation complete as per drawing and technical specification								
			N, Without Plasticiser								
			A P.C.C. grade M15	m <sup>3</sup>	3.36						
			C. R.C.C. Grade M20								
			CASE I Using Concrete Mixer	m <sup>3</sup>	8.64						
23	12.40	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.864						
			<b>Substructure</b>								
24	13.5 A	1500, 1700 & 2200	Plain/reinforced Cement concrete in substructure complete as per drawings & technical specification Clause 802, 805, 807, 1202 & 1204								
			N, Without Plasticiser								
			E. RCC M20 grade								
			a. height upto 5 m	m <sup>3</sup>	21.2						
			CASE I Using Concrete Mixer								
25	13.6 (B)	1600 & 2200	Supplying fitting & placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	2.12						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
26	13.10	710.1.4 of IRC:78 & 2200	Providing & laying filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2.2 of MoRTH specification to a thickness not less than 600 mm with smaller size towards the soil & bigger size towards the wall & providing over entire surface behind abutment, wing wall, return wall to full height compacted to firm condition complete as per drawing and technical specification	m <sup>3</sup>	38.4						
			<b>Superstructure</b>								
27	14.1	1500,1600 & 1700	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification including providing plasticier (Masterplast PL - 1/SPL - 2 or equivalent), air entraining and water reducing plasticier (Masterplast PAE or equivalent) and acclerating plasticiser (Masterplast ACPL or equivalent) conforming to IS-9103-1999 and steel shuttering framework								
			N, Without Plasticiser								
			A RCC m20 grade								
			CASE I Using Concrete Mixer								
			I) FOR SOLID SLAB								
			(p) Height upto 5 m	m <sup>3</sup>	9.6						
28	14.2	1600	Supplying fitting & placing TMT bar reinforcement in super-structure including splicing complete as per drawing and technical specifications								
			c With other make ISI marked TMT rebars	Tonne	0.96						
29	14.9	2705	Drainage spout complete as per drawing & Technical specification	m <sup>3</sup>	32						
			<b>Sub Total</b>								



**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
<b>CONSTRUCTION OF ROAD SIDE STONE MASONRY BREAST WALL</b>											
<b>Name of Road: Approach Road At Sonaighuli</b>											
<b>Length of Road = 626.781 m</b>											
			Foundation								
30	12.1	304	<b>Excavation for Structures</b> Earthwork in excavation of foundation in structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterous matter, dressing of sides and bottom and backfilling with approved material								
	I		<b>Ordinary Soil</b>								
	A		<b>Manual Means</b>								
	a		<b>Without Dewatering</b>								
	i		<b>upto a height of 3m</b>	m <sup>3</sup>	588.87						
31	17.56		Providing brick soling in foundation and under floor with stone/best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete.								
			(c).Stone soling 150mm thick	m <sup>2</sup>	111.15						
32	12.4	2100	<b>PCC 1:3:6 in Foundation</b> Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days	m <sup>3</sup>	16.67						

**Contract-4 Reservoirs, Transmission main, Access Road - South Central Zone  
Sonaighuli - Access Road  
Bill of Quantities**

Sr no.	Item No.	Reference of MoSRT&H Specification	Description	Unit	Quantity	Rate			Amount		
						Local		Foreign	Local		Foreign
						Basic Rate	Applicable taxes and duties etc.		Basic Rate	Applicable taxes and duties etc.	
			<b>Sub-Structure</b>								
33	13.1	1300 & 2200	<b>Stone Masonry work</b> in cement mortar 1:3 in sub-structure complete as per drawing and technical specification A. Random Rubble Masonry	m <sup>3</sup>	287.69						
34	13.2	1300 & 2200	<b>Pointing</b> with cement mortar (1:3) on brickwork in sub-structure as per drawing & technical specification	m <sup>2</sup>	188.10						
35	13.8	2200 & 2706	<b>Providing weepholes</b> on brick/plain/reinforced abutment, wing wall/return wall 100mm dia AC pipe, extending through full width of the structure and slope of 1V:20H towards drawing face. Complete as per drawing & technical specification	each	172.00						
36	13.10	710.1.4 of IRC:78 & 2200	<b>Providing and laying filter media</b> with granular materials/crushed stone aggregates satisfying the requirements laid down in clause 2504.2.2 of MoRTH Specification to a thickness not less than 600 mm with smaller size towards the soil and bigger size towards	m <sup>3</sup>	22.50						
			<b>Sub Total</b>								
			<b>Total</b>								